

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Inquiry Concerning Deployment of Advanced	)	GN Docket No. 18-238
Telecommunications Capability to All	)	
Americans in a Reasonable and Timely	)	
Fashion	)	

**COMMENTS OF ADTRAN, INC.**

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## SUMMARY

ADTRAN welcomes this review under Section 706 as to “whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion.” Unlike some of the previous Section 706 Inquiries, this proceeding asks the right questions and suggests that it will conduct the analyses specified by Congress in Section 706. The Commission appears poised to assess progress in advanced services deployment to determine whether it is reasonable and timely – it is not simply asking “are we there yet?”

The Commission should continue to use the 25/3 Mbps broadband speed as the benchmark for advanced services in the Section 706 assessment. In its comments in the previous Section 706 inquiry, ADTRAN observed that the 25/3 Mbps benchmark was on the upper end of reasonableness, given the statute's definition of "advanced telecommunications capabilities," the Commission's interpretation of that term, consumer adoption rates for high speed services, and consumer demand for services such as 4K TV. Nothing has changed that would alter our previous assessment. With respect to ongoing reviews of the benchmarks, as a balance between precision and the burdens of re-assessing the benchmarks, ADTRAN urges the Commission to undertake a detailed review of the benchmarks every three years.

In conducting its Section 706 analyses, ADTRAN urges the Commission to complete a fulsome review so that it gets a full picture of both the geographic and demographic characteristics of service-deprived people and territories. The Commission should also consider continuing advances in wireless technologies. 5G services are beginning to be deployed, and they are poised to be a robust substitute for wireline broadband services. Likewise, satellite services may soon be more than just a niche supplier for broadband service.

With respect to assessing the deployment of advanced services to schools and libraries, the Commission should continue to use the current benchmarks. However, the Commission should consider all technologies capable of meeting those benchmarks, not just fiber to the premises. In addition, in assessing the deployment of advanced services, ADTRAN disagrees with any suggestion that the broadband service providers’ handling of natural disasters renders the progress towards the goal of universal access to advanced telecommunications capability as not “reasonable and timely.”

Finally, ADTRAN applauds all of the current Commission efforts to accelerate broadband deployment. ADTRAN suggests some additional steps the Commission should undertake, including fostering broadband within schools by expanding WiFi subsidies and implement the “preferred master contract” model embraced in the Commission’s 2014 *E-Rate Reform Order*. ADTRAN also urges the Commission to terminate the “set-top box” proceeding, which appears to be a thinly-veiled attempt to place the regulator’s thumb on the competitive scale of MVPD services, and to resolve the still-open USF contribution proceeding to provide certainty to funding for the broadband subsidy programs. In addition to steps it can take itself, ADTRAN believes there are steps the Commission can take in working with others that could help accelerate broadband deployment. These include working with the White House to ensure

that its infrastructure program includes broadband, and working with Congress with regard to creating tax incentives for broadband deployment and adoption of “net neutrality” legislation so that an open Internet is not subject to continuing shifts as Administrations change. ADTRAN also urges the Commission to work with other state and federal agencies (and the private sector) on education and training programs for consumers in order to spur broadband adoption, because higher “take rates” will also make deployment of broadband economical in more areas.

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**COMMENTS OF ADTRAN, INC.**

ADTRAN, Inc. (“ADTRAN”) takes this opportunity to comment on several issues raised in the Commission’s *Notice of Inquiry* regarding the Fourteenth Broadband Progress Report undertaken pursuant to Section 706 of the Telecommunications Act of 1996.<sup>1</sup> Congress directed the Commission to determine and report annually on whether during the preceding year progress has been made on delivering advanced services.<sup>2</sup> The *Notice of Inquiry* seeks input from the public that will help allow the Commission to answer that question. ADTRAN commends the Commission for undertaking in this proceeding an objective

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<sup>1</sup> *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, GN Docket No. 18-238, FCC 18-119, released August 9, 2018 (hereafter cited as “*Notice of Inquiry*”). The Commission subsequently extended the dates for comments and replies in this proceeding. *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, GN Docket No. 18-238, DA 18-859, released August 17, 2018.

<sup>2</sup> 47 U.S.C. § 1302. Section 706 of the Telecommunications Act of 1996, Pub. L. No. 104-104, § 706, 110 Stat. 56, 153 (1996), as amended by the Broadband Data Improvement Act, Pub. L. No. 110-385, 122 Stat. 4096 (2008), as codified in Title 47, Chapter 12 of the United States Code. *See* 47 U.S.C. § 1301 *et seq.*

assessment of the fundamental question raised by Congress – are advanced telecommunications services continuing to be deployed to all Americans in a reasonable and timely fashion?

ADTRAN, founded in 1986 and headquartered in Huntsville, Alabama, is a leading global provider of networking and communications equipment. ADTRAN's products enable voice, data, video and Internet communications across a variety of network infrastructures. ADTRAN's solutions are currently in use by service providers, private enterprises, government organizations and millions of individual users worldwide. ADTRAN thus brings an expansive perspective to this proceeding, as well as an understanding of the importance to individuals, communities and our country of robust and ubiquitous broadband. ADTRAN has been a strong advocate in Commission proceedings to help spur broadband deployment,<sup>3</sup> and has itself launched a gigabit initiative that has far surpassed its goal of facilitating the deployment of 200 gigabit communities by the end of 2015, with over 350 gigabit communities deployed.<sup>4</sup> And

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<sup>3</sup> E.g., Comments of ADTRAN in WC Docket No. 17-84, filed January 17, 2018; Comments of ADTRAN in WC Docket No. 10-90, filed December 6, 2017; Comments of ADTRAN in GN Docket No. 17-199, filed September 21, 2017; Comments of ADTRAN in GN Docket No. 15-191, filed September 15, 2015; Comments of ADTRAN in WC Docket No. 10-90 *et. al.*, filed August 8, 2014; Comments of ADTRAN in WC Docket No. 10-90, filed March 28, 2013; Comments of ADTRAN in WC Docket No. 10-90 *et. al.*, filed January 18, 2012; Comments of ADTRAN in WC Docket No. 10-90 *et. al.*, filed April 18, 2011.

<sup>4</sup> See, *Press Release*, "ADTRAN Sets the Nation's Communities on the Path to Gigabit Transformation -- Utilities, MSOs and land developers deliver Gigabit broadband to over 350 communities," <http://phx.corporate-ir.net/phoenix.zhtml?c=67989&p=irol-newsArticle&ID=2178711>; <http://gigcommunities.net/adtran-reaches-200-gigabit-community-milestone/> ("More than 200 communities are now able to access [next-generation gigabit broadband services](#) as a result of ADTRAN's Enabling Communities, Connecting Lives program, ADTRAN announced August 11."); *Light Reading*, August 13, 2014, "Adtran Launches 'Gig Communities' Initiative," available at <http://www.lightreading.com/broadband/fttx/adtran-launches-gig-communities-initiative/d/d-id/710330>. See also, <http://www.adtran.com/index.php/broadband-access>.

ADTRAN has participated in the Commission's previous Section 706 Notice of Inquiry proceedings.<sup>5</sup>

ADTRAN certainly shares the Commission's and Congress' goal of universal availability of advanced services. And ADTRAN believes we are well on our way towards achieving that ultimate goal. In less than a generation, consumers have gone from the best-available wireline technology of 56 kbps dial-up modems to gigabit service to the home in hundreds of markets and spreading fast.<sup>6</sup> Wireless carriers have built out fourth generation wireless services nearly everywhere, and those companies have begun to deploy fifth generation mobile broadband services. Satellite service now provides service at speeds up to 50 Mbps to remote and insular areas from high-throughput Geostationary satellites, with multiple proposals for much greater speeds through constellations of low-Earth orbit satellites.

ADTRAN thus welcomes this *Notice of Inquiry's* proposal to continue the recent use of objective analyses of the progress that has already occurred, and whether it is reasonable and timely. ADTRAN also appreciates the Commission's inquiry into what can be done to ensure that progress in deploying advanced services to all Americans will continue -- and accelerate. This should not be viewed as some rote exercise mandated by Congress. Rather, it is an opportunity to take stock of where we are and how best to get to where we want to be.

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<sup>5</sup> E.g., Comments of ADTRAN, Inc. in Docket No. GN 17-199, filed September 21, 2017; Comments of ADTRAN, Inc. in Docket No. GN 16-245, filed September 6, 2016; Reply Comments of ADTRAN, Inc. in Docket No. GN 16-245, filed September 21, 2016; Comments of ADTRAN, Inc. in Docket No. GN 14-126, filed March 6, 2015; Comments of ADTRAN, Inc. filed in Docket No. GN 10-159, filed September 7, 2010.

<sup>6</sup> According to one recent report, some 65 million consumers in the United States now have Gigabit services available to them. <https://www.telecomlead.com/broadband/gigabit-internet-deployments-surge-38-since-may-2017-85647>.

### ***The Commission Appears to be Asking the Right Questions***

The *Notice of Inquiry* continues the recent determination that in conducting the annual assessment of advanced services deployment mandated by Congress, the Commission should focus on the nature of the progress being made towards achieving the goal of universal availability. The Commission's analysis should not be simply "are we there yet?" – with "there" being the goal of 100% coverage. But rather the Commission should be assessing whether progress towards that goal is continuing at a constant, accelerating or slowing pace. Such analyses stand in sharp contrast to some of the prior Section 706 Reports, which were a pre-determined charade that "moved the goalposts" to support a negative finding as a means of establishing authority to adopt "net neutrality" rules.<sup>7</sup>

In the Commission's last Section 706 Report<sup>8</sup> -- and as reflected by the questions raised in the *Notice of Inquiry* – the Commission is focusing on the evolution of advanced services deployment. As the Commission observed, Congress' use of the phrase "whether advanced telecommunications capability *is being deployed* to all Americans *in a reasonable and timely fashion*"<sup>9</sup> was a clear indication that Congress wanted the Commission to evaluate the progress towards universal availability of broadband services, not simply whether it had been achieved.

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<sup>7</sup> See, e.g., Comments of ADTRAN, Inc. in Docket GN Docket No. 15-191, filed September 15, 2015 at pp. 3-10.

<sup>8</sup> *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, 33 FCC Rcd 1660 (2018) (hereafter cited as "2018 Broadband Deployment Report").

<sup>9</sup> (Emphasis added) 47 U.S.C. § 1302. Section 706 of the Telecommunications Act of 1996, Pub. L. No. 104-104, § 706, 110 Stat. 56, 153 (1996), as amended by the Broadband Data Improvement Act, Pub. L. No. 110-385, 122 Stat. 4096 (2008), as codified in Title 47, Chapter 12 of the United States Code. See 47 U.S.C. § 1301 *et seq.*



The Commission now seems to have acknowledged this Congressional intent. Last year, after assessing the record, the Commission in the *2018 Broadband Deployment Report* decided:

We conclude that advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion. As discussed above, this finding does not mean that all Americans now have broadband access. Rather, it means that we are back on the right track when it comes to deployment.<sup>10</sup>

In this Fourteenth *Notice of Inquiry*, the Commission is analyzing whether that continues to be the case.<sup>11</sup> In addition, the Commission is attempting to determine whether its current actions are helping that progress, and whether there are additional steps it can take to accelerate broadband deployment. Moreover, the Commission wants to conduct granular analyses to discover where and why there are territories that have not yet been the beneficiaries of broadband deployment, and what can be done for those pockets. ADTRAN applauds the Commission for undertaking a thorough review of advanced services deployment consistent with Congressional intent.

### ***Defining Advanced Telecommunications Capability***

Section 706 directs the Commission to conduct an annual inquiry on “advanced telecommunications capability” deployment.<sup>12</sup> The *Notice of Inquiry* seeks comment on whether

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<sup>10</sup> *2018 Broadband Deployment Report* at ¶ 94.

<sup>11</sup> *Notice of Inquiry* at ¶¶ 6-7.

<sup>12</sup> 47 U.S.C. § 1302(d)(1) provides the definition of advanced telecommunications capability:

The term “advanced telecommunications capability” is defined, without regard to any transmission media or technology, as high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology.

the Commission should retain the 25/3 Mbps benchmark for “advanced telecommunications capability” used in the previous inquiry. ADTRAN continues to believe that this is still an appropriate benchmark presently.

In its comments in the earlier Section 706 inquiries, ADTRAN observed that the 25/3 Mbps benchmark was on the upper end of reasonableness, given the statute's definition of "advanced telecommunications capabilities," the Commission's interpretation of that term, consumer adoption rates for high speed services, and consumer demand for services such as 4K TV.<sup>13</sup> Nothing has changed that would alter our previous assessment. While 4K TV purchases have been growing, they still do not comprise a majority of the new television set purchases, and 4K TV content is still limited.<sup>14</sup>

The *Notice of Inquiry* also seeks comments on updating the benchmarks.<sup>15</sup> The statutory definition of “advanced services” is not intended to be static. As broadband technologies and end user applications evolve, and customer demand for new capabilities both react to and drive changes in those capabilities, the broadband speeds needed to meet those demand will also

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<sup>13</sup> Comments of ADTRAN in GN Docket No. 17-199, filed September 21, 2017 at pp. 5-7; Comments of ADTRAN in GN Docket No. 16-245, filed September 6, 2016 at pp. 7-8.

<sup>14</sup> See, e.g., Digital Trends, “Here’s how and where you can watch the best 4K content,” posted September 5, 2018, available at <https://www.digitaltrends.com/home-theater/where-and-how-to-watch-4k-uhd-content/>

We have a classic mix of good and bad news for you. The good news is the 4K Ultra HD content pipeline has transitioned from a trickle to a steady flow, and in the next few years, it’s going to be more like a rushing river. The bad news is that, even with 8K TV looming, some of these sources will be exclusive to certain TV brands or streaming devices, and 4K content is still limited.

<sup>15</sup> *Notice of Inquiry* at ¶ 10.

change. Thus, ADTRAN believes that the Commission should conduct periodic reviews to determine whether the benchmark(s) should be updated. But given that benchmarks are a tool for measuring general progress, exact precision is unnecessary, and indeed may be counterproductive. Stability in the benchmark allows year-over-year comparisons. Moreover, annual re-assessments of the benchmarks would require the Commission and commenters to dedicate resources to conduct analyses of various determinants of the benchmarks. ADTRAN thus suggests that the Commission should only conduct detailed re-assessments of the benchmarks using the criteria discussed below every three years, so they should postpone such extensive analyses until next year.

In undertaking that study, the Commission should look at both the services/applications that customers are accessing, as well as the broadband speeds customers are subscribing to. Both provide evidence of the evolving “high-quality voice, data, graphics, and video telecommunications” that comprise advanced services. Consumer choices as to the broadband speeds being purchased when provided a range of options reflects expectations about being able to enjoy a variety of desired applications. Such actual marketplace decisions are entitled to more weight than some bureaucrats simply calculating throughput requirements for cutting edge technologies while making assumptions about demand.

***Reasonable and Timely Progress Towards Advanced Services for All Americans***

The *Notice of Inquiry* additionally requests comment on whether fixed and mobile broadband technologies are substitutes for purposes of assessing whether deployment to all Americans is being achieved on a reasonable and timely basis.<sup>16</sup> ADTRAN believes that we are

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<sup>16</sup> *Notice of Inquiry* at ¶ 11.

rapidly trending in that direction. Several service providers are using 5G technologies to fulfill their CAF obligations to deploy service to unserved and underserved homes.<sup>17</sup> And more broadly, Verizon recently announced that it will soon begin offering 5G services as a broadband competitive alternative to wired broadband service generally, not simply as a CAF fulfillment mechanism.<sup>18</sup> The expectation that such 5G services will be deployed more broadly in the near future is further evidence of timely and reasonable progress towards the availability of advanced services to all Americans.

The *Notice of Inquiry* also requests comments on whether satellite services are another technology that may be viewed as providing advanced telecommunications capability.<sup>19</sup> Presently there are several high throughput satellites (“HTS”) already offering broadband service with advertised speeds of 25/3 Mbps or greater, and thus meeting the current benchmark.<sup>20</sup> However, those services have some disadvantages compared to current terrestrial broadband offerings. The HTS services available presently are offered by geostationary satellites, and the resulting significant latency delays means that any interactive services are inferior to the

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<sup>17</sup> E.g., <https://www.fiercewireless.com/wireless/at-t-expands-fixed-wireless-offering-to-nine-new-states>.

<sup>18</sup> E.g., <https://www.zdnet.com/article/verizon-launching-5g-in-october/>

<sup>19</sup> *Notice of Inquiry* at ¶ 17.

<sup>20</sup> See, <https://www.hughesnet.com/get-started> (“HughesNet Gen5 is faster than ever – 25 Mbps download and 3Mbps Upload – and is available to anyone, anywhere, coast-to-coast.”); <https://www.exede.com/viasat-internet/> (offers “up to” 50/3 Mbps speeds in select areas and 30/3 Mbps everywhere).

terrestrial broadband offerings.<sup>21</sup> In addition, capacity constraints of these geostationary satellite services render them a less than optimal solution for some customers.

In assessing progress towards universal access to advanced telecommunications capabilities, the Commission should bear in mind that there appears to be technological improvements for satellite broadband that will be deployed in the not-too-distant future. Several entities have proposed mega-constellations of low-Earth orbit satellite systems, and some have already been conditionally authorized by the Commission.<sup>22</sup> The operation of these satellites in low-Earth orbit should significantly reduce the latency problems faced by geostationary orbit (“GSO”) satellites, and the robustness of the constellations with the concomitant frequency reuse should overcome the capacity constraints. And once deployed, these satellite systems should be able to provide service economically even to the most remote customers.<sup>23</sup>

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<sup>21</sup> Thus, while satellite broadband provides streaming services that are perfectly acceptable, real-time interactive services such as VoIP or gaming are far from ideal. The Commission recognized these drawbacks to satellite broadband services when it attached a negative weighting to broadband services with latency above 100 ms but below 750 ms in its recently-concluded reverse auction to award subsidies in the CAF Phase II program. *Connect America Fund et al.*, Report and Order and Order on Reconsideration, 32 FCC Rcd 1624 (2017) at ¶¶ 31-34.

<sup>22</sup> Following OneWeb’s initial application, thirteen additional companies filed for authorizations. IBFS File Nos. SAT-MOD-20160624-00060 and SAT-AMD-20161115-00116 (O3b Limited); SAT-PDR-20161115-00108 (Telesat Canada); SAT-LOA-20161115-00109 (The Boeing Company); SAT-PDR-2016111500111 (Space Norway AS); SAT-PDR-20161115-00112 (LeoSat MA, Inc.); SAT-LOA-20161115-00113 (Karousel LLC); SAT-PDR-20161115-00114 (Kepler Communications Inc.); SAT-LOA-20161115-00117 (Audacy Corporation); SAT-LOA-20161115-00118 (SpaceX); SAT-PDR-20161115-00120 (ViaSat, Inc.); and SAT-LOA-20161115-00121 (Theia Holdings A, Inc.); SAT-LOI-20170726-00111 (New Spectrum Satellite, Ltd). So far, four applications have been granted. See *WorldVu Satellites Limited, Petition for Declaratory Ruling Granting Access to the U.S. Market for the OneWeb NGSO FSS System*, Order and Declaratory Ruling, 32 FCC Rcd 5366 (2017); *Space Norway AS*, Order and Declaratory Ruling, 32 FCC Rcd 9649 (2017) (Space Norway Order); *Telesat Canada*, Order and Declaratory Ruling, 32 FCC Rcd 9663(2017) (Telesat Canada Order); *Space Exploration Holdings, LLC*, FCC 18-38, released March 29, 2018.

ADTRAN cautions, however, that at this point this is a potential solution to ubiquitous broadband access, but not necessarily a “sure thing.” There are issues to be resolved with respect to frequency sharing amongst the GSO and non-geostationary (“NGSO”) satellite systems, as well as between the satellite services and terrestrial services. Moreover, previously-licensed NGSO satellite systems similar to the current proposals never got launched, and it is not clear whether the economics of constructing, launching and operating these mega-constellations have changed significantly in the intervening years.<sup>24</sup> But particularly to the extent the Commission is facilitating the deployment of these new satellite constellations by issuing licenses at a much faster pace than under the previous processing rounds, this does support the claim that there does seem to be reasonable progress on ubiquitous advanced services deployment – even though in the case of satellite broadband, we may not be there quite yet.

In addition to assessing advanced services deployment to homes, the *Notice of Inquiry* seeks to assess deployment of advanced services to schools and classrooms.<sup>25</sup> ADTRAN believes that the Commission should continue to evaluate progress in achieving deployment to schools and classrooms using the previously-adopted metrics of a short-term goal of 100 Mbps

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<sup>23</sup> Indeed, these constellations theoretically will have the capability to provide service anywhere on the planet.

<sup>24</sup> See, e.g., Teledesic Corporation, Application for Authority to Construct, Launch and Operate a Low Earth Orbit Satellite System in the Domestic and International Fixed-Satellite Service, *Order and Authorization*, 12 FCC Rcd 3154 (1997). Teledesic surrendered its authorization in a letter dated June 27, 2003 (available at [surrender](#)); Application of SkyBridge L.L.C. for Authority to Launch and Operate a Global Network of Low-Earth Orbit Communications Satellites Providing Broadband Services in the Fixed-Satellite Service, *Order and Authorization*, 20 FCC Rcd 12389, (Int’l Bur. 2005). SkyBridge surrendered the license on August 17, 2005. See Satellite Policy Branch Information, Actions Taken, *Public Notice*, Report No. SAT-00314, DA 05-2327 (released August 19, 2005).

<sup>25</sup> *Notice of Inquiry* at ¶ 12.

per 1000 students and staff, and a long-term goal of 1 Gbps per 1,000 students and staff.

ADTRAN is concerned, however, because the *Notice of Inquiry* proposes to rely on two data sources to evaluate deployment to schools -- EducationSuperHighway's *2017 State of the States Report* and the Consortium for School Networking (CoSN) *2017 Annual Infrastructure Survey Report*.<sup>26</sup> One of those data sources -- the EducationSuperhighway -- does not use a technology-neutral measure of the broadband availability to schools, but instead only assesses whether fiber has been deployed to the school.

The definition of "advanced telecommunications capability" in Section 706(d)(1) includes the principle of "using any technology," and other technologies besides fiber can provide the necessary capacity for service to schools. For example, advances in copper technologies have greatly increased the capabilities of the embedded copper loops. G.fast is deployed from distribution points located deep in the outside plant, and can deliver combined upstream and downstream speeds of up to 1 Gbps over short copper loops.<sup>27</sup> And interoperability tests of DOCSIS 3.1 products for a new generation of high-speed hardware have demonstrated that this technology can deliver up to 10 Gbps on Hybrid Fiber-Coax (HFC) networks.<sup>28</sup> In addition, fixed wireless broadband solutions are also available presently that

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<sup>26</sup> *Notice of Inquiry* at ¶ 20.

<sup>27</sup> ITU-T Recommendation G.9701, "Fast Access to Subscriber Terminals (FAST) – Physical layer specification," December 2014. *See also*, *Light Reading*, "All That's Gigabit Doesn't Glitter" (<http://www.lightreading.com/gigabit/dsl-vectoring-gfast/all-thats-gigabit-doesnt-glitter/d/d-id/735558>); *Light Reading*, "Adtran Gfast Extends Gigabit Reach," (<http://www.lightreading.com/gigabit/dsl-vectoring-gfast/adtran-gfast-extends-gigabit-reach/d/d-id/735624>).).

<sup>28</sup> *E.g.*, <http://www.businesswire.com/news/home/20141216005295/en/Multi-Gigabit-Cable-Broadband-Speeds-Closer-Consumers#.VPSbTk2Ya70>. *See also*, Gigaom, "Comcast shows off 1 Gbps broadband," <https://gigaom.com/2011/06/16/comcast-shows-off-1-gbps-broadband/>; ars technica, "Comcast Planning Gigabit Cable for Entire US Territory in 2-3

provide 1 Gbps and higher services.<sup>29</sup> Thus, the Commission must recognize that the EducationSuperHighway data will undercount schools that have access to broadband capable of meeting the short-term and long-term benchmarks by only considering fiber.

The *Notice of Inquiry* also raised for the first time in a Section 706 inquiry the issue of disaster affected areas.<sup>30</sup> ADTRAN believes that Congress' use of the language of assessing whether advanced services are being deployed in a "reasonable and timely" fashion is sufficiently broad so as to recognize that Acts of God -- such as hurricanes and floods -- will result in temporary periods when advanced services are not available. Service reliability and service restoration have long been critical goals of broadband service providers. Moreover, newer technologies such as high throughput satellites and unmanned aerial vehicles can provide more robust and rapid restoration of service on a temporary basis. In addition, the deployment of fiber optics as a replacement for copper has made the networks more resilient. Thus, ADTRAN disagrees with any suggestion that the broadband service providers' handling of natural disasters renders the progress towards the goal of universal access to advanced telecommunications capability as not "reasonable and timely."

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Years," <http://arstechnica.com/business/2015/08/comcast-planning-gigabit-cable-for-entire-us-territory-in-2-3-years/> .

<sup>29</sup> E.g., [http://www.bridgewave.com/company/pressreleases\\_20141011.cfm](http://www.bridgewave.com/company/pressreleases_20141011.cfm) ("Bridgewave Unveils Multi- Gigabit Millimeter Wave Wireless Backhaul and Front Haul Solutions"); <http://www.dragonwaveinc.com/products/packet-microwave/horizon-quantum> ("Delivering from 2 to 4 Gbps per link, Horizon Quantum represents the next generation in packet microwave technology and sets a new benchmark for performance.").

<sup>30</sup> *Notice of Inquiry* at ¶ 15.



***Actions the Commission Should Undertake to Help Ensure that Advanced Services are Deployed to All Americans***

As the *Notice of Inquiry* recognizes,<sup>31</sup> the Commission has already undertaken a number of actions to accelerate the deployment of broadband services. The Commission has streamlined and accelerated the processes for retirement of obsolete networks when new fiber facilities are deployed.<sup>32</sup> The Commission also eliminated the Title II regulation of Internet access services and the accompanying vague and overly prescriptive net neutrality provisions, which had deterred broadband investment.<sup>33</sup> The Commission is also speeding up the process for pole attachments.<sup>34</sup> The Commission is using the Broadband Deployment Advisory Committee (“BDAC”) process to develop model codes, and elimination of vague and unnecessary local requirements. Importantly, the Commission is also engaged in spectrum allocations and rulemaking proceedings that are designed to speed the deployment of 5G and other advanced wireless services. These include streamlining or eliminating unnecessary environmental and historic preservation reviews.<sup>35</sup> And in some situations, the Commission has preempted local

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<sup>31</sup> *Notice of Inquiry* at ¶¶ 23-26.

<sup>32</sup> *Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, WC Docket No. 17-84, Report and Order, Declaratory Ruling, and Further Notice of Proposed Rulemaking, 32 FCC Rcd 11128 (2017); *Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, WC Docket No. 17-84, Second Report and Order, FCC 18-74, released June 8, 2018.

<sup>33</sup> *Restoring Internet Freedom*, WC Docket No. 17-108, Declaratory Ruling, Report and Order, and Order, 33 FCC Rcd 311 (2018).

<sup>34</sup> *Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, FCC 18-111, released August 3, 2018.

<sup>35</sup> *Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Deployment*, FCC 18-30, released March 30, 2018; *Accelerating Wireless Broadband*

regulations that deter or unnecessarily delay deployment of the small antenna systems that will be necessary for the densification of networks for 5G deployments.<sup>36</sup>

The Commission is also planning to address at its upcoming meeting at the end of this month an item to help eliminate more regulatory impediments that unnecessarily add delays and costs to bringing advanced wireless services to the public.<sup>37</sup> In addition, the Commission has expanded its Connect America Fund, E-Rate, Rural Healthcare and Lifeline subsidy programs, and successfully implemented a new method of allocating subsidies for broadband deployment using reverse auctions. All these actions are beneficial and will help ensure that all Americans have access to advanced services in a reasonable and timely fashion, and ADTRAN supports each of these regulatory activities.

ADTRAN believes there are some additional steps the Commission can take that will further accelerate broadband deployment. First, with regard to broadband deployment to schools, ADTRAN would urge the Commission to re-examine the current limit of \$150 per student every five years for Category-2 subsidies.<sup>38</sup> Broadband connections to the school at the benchmark speeds are useful only if there is also connectivity to the students within the schools. However, based on ADTRAN's experiences with the E-rate program, it appears as if the current limits are inadequate to build out reliable internal connections and WiFi capabilities to connect

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*Deployment by Removing Barriers to Infrastructure Deployment*, Report and Order, 32 FCC Rcd 9760 (2017).

<sup>36</sup> *Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, FCC 18-111, released August 3, 2018.

<sup>37</sup> <https://www.fcc.gov/document/streamlining-deployment-next-generation-wireless-infrastructure>.

<sup>38</sup> *Modernizing the E-rate Program for Schools and Libraries*, 29 FCC Rcd 8870 (2014)(hereafter cited as "*E-rate Reform Order*") at ¶ 86.

the students. Second, the Commission adopted, but has not yet implemented, a “preferred master contracts” model that could enhance the efficiency of the E-Rate subsidy program.<sup>39</sup> The Commission should implement that measure, which would also help schools afford the necessary connectivity within the school.

With respect to broadband deployment more generally, ADTRAN urges the Commission to ensure that service providers’ transitions to new technologies are not hampered by unnecessary regulatory delays.<sup>40</sup> ADTRAN also urges the Commission to terminate the proceeding with regard to video navigation choices.<sup>41</sup> Although ostensibly addressing set top boxes, the proceeding is a thinly-veiled attempt to “spur competition” in the MVPD marketplace, and the threat of the Commission placing its thumb on the competitive scale can deter investment in broadband networks that provide video and broadband services. In addition, ADTRAN urges the Commission to resolve the long-pending USF contribution proceeding<sup>42</sup> in order to stabilize the funding for the broadband, Lifeline and schools and libraries subsidy programs. The most recent proposed USF contribution factor of 20.1% -- a “record high” -- magnifies the distortive effects of assessing the USF fees on a declining segment of the telecommunications market.<sup>43</sup>

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<sup>39</sup> *E-rate Reform Order* at ¶¶ 170-173.

<sup>40</sup> *See, e.g.*, ADTRAN Comments in GN Docket No. 13-5, filed February 5, 2015; ADTRAN Comments in WC Docket No. 17-84, filed June 15-2017.

<sup>41</sup> *Expanding Consumers' Video Navigation Choices*, 31 FCC Rcd 1544 (2016).

<sup>42</sup> This proceeding was begun over a decade ago. *Universal Service Contribution Methodology*, 21 FCC Rcd 7518 (2006).

<sup>43</sup> *Public Notice*, “Proposed Fourth Quarter 2018 Universal Service Contribution Factor,” DA 18-944, released September 12, 2018 (proposes a USF contribution factor of 20.1%).

Finally, ADTRAN believes there are steps the Commission can take in working with others that could help accelerate broadband deployment. These include working with the White House to ensure that its infrastructure program includes broadband, working with RUS to harmonize the e-Connectivity Pilot program, and working with Congress with regard to creating tax incentives for broadband deployment and adoption of “net neutrality” legislation so that an open Internet is not subject to continuing shifts as Administrations change. ADTRAN also urges the Commission to continue working with state and local governments through the BDAC process. ADTRAN also urges the Commission to work with other state and federal agencies (and the private sector) on education and training programs for consumers. Such activities should help improve broadband adoption,<sup>44</sup> and the resulting higher “take rates” can make it more economical for service providers to deploy broadband in more areas.

### ***Conclusion***

ADTRAN welcomes this inquiry based on the intended purpose Congress set out in Section 706 to review objectively progress in deployment of advanced telecommunications services throughout America. ADTRAN believes that such an assessment will reveal significant progress, but with more work still to be done in some areas. And as explained in these comments, ADTRAN believe there are steps the Commission can take by itself, and by working with others, that will foster the deployment of broadband to all Americans. Such actions will

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<sup>44</sup> As the Commission explained in Chapter IX of The National Broadband Plan (<https://www.fcc.gov/general/national-broadband-plan>), digital literacy and demonstrations of relevance are necessary for consumer adoption of broadband. It is not simply the cost of service that is deterring adoption.

thus well serve the public interest by ensuring reasonable and timely deployment of advanced telecommunications services, consistent with Congressional directives.

Respectfully submitted,  
ADTRAN, Inc.

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